Independent claim 5 recites yet another combination that includes, *inter alia*,

> *"preparing a powder of an alloy that has a composition comprising 27.0 mass% to 32.0 mass% of R (which is at least one of Nd, Pr, Dy and Tb and which always includes either Nd or Pr), 63.0 mass% to 72.5 mass% of T (which always includes Fe and up to 50% of which is replaceable with Co), 0.01 mass% to 0.08 mass% of Ga and 0.85 mass% to 0.96 mass % of B . . . compacting and sintering the alloy powder, thereby making a sintered magnet . . . subjecting the sintered magnet to a heat treatment at a temperature of 400°C to 600°C."*

At the very least, Uchida, whether taken alone or in combination, fail to disclose or suggest any of these exemplary features recited in independent claims 1 and 5.

The Examiner has failed to establish a *prima facie* case of obviousness for at least four reasons. First, the Examiner has not demonstrated how Uchida, whether taken alone or in combination, discloses or suggests each and every feature recited in the claims. *See* M.P.E.P. § 2143 (8th ed. 2007). Second, the Examiner has not shown the existence of any reasonable probability of success in modifying Uchida, the base reference, based on the teachings of another secondary reference, in a manner that could somehow result in the claimed invention. *See id.* Third, the Examiner has not identified any suggestion or motivation, either in the teachings of the applied references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the apparatus of Uchida in a manner that could somehow result in the claimed invention. *See id.* Finally, the Examiner has not explained how his obviousness rationale could be found in the prior art — rather than being a hindsight reconstruction of Applicants' own disclosure. *See id.*

Each of the Examiner's factual conclusions must be supported by "substantial evidence" in the documentary record, as required by the Federal Circuit. *See In re Lee*, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). The Examiner has the burden of documenting all findings of fact necessary to support a conclusion of anticipation or obviousness "less the

'haze of so-called expertise' acquire insulation from accountability." *Id.* To satisfy this burden, the Examiner must specifically identify where support is found within the prior art to meet the requirements of 35 U.S.C. §§ 102(b) and 103. In this case, however, the Examiner has failed to satisfy his burden of demonstrating how Uchida, taken alone or in combination with another reference, can either anticipate or render obvious each and every one of the limitations present in independent claims 1 and 5, as required by the M.P.E.P. and Federal Circuit jurisprudence.

On page 3 of the outstanding Office Action, the Examiner states that *"[e]ach of Uchida '365's examples cited by the Examiner contains 0.97 wt% boron whereas the instant claims recite an upper boron content of 0.96 wt%. Thus, the instantly claimed boron content and the exemplified boron content taught by Uchida '365 closely approximate each other."* On page 4, the Examiner acknowledges that the claims and Uchida differ in that Uchida does not teach the exact same proportions as recited in the instant claims and that Uchida is silent with respect to the relative proportions of the $R_2T_{14}B$ and $R_{1.1}Fe_4B_4$ phases as recited in claim 1. On page 5, the Examiner further concludes *"because Uchida '365's specific examples . . . contain 0.97 wt% gallium which closely approximates the instantly claimed upper limit of 0.96 wt% gallium, one of ordinary skill in the art would have expected the specific examples of R-T-B sintered magnets taught by Uchida '365 to have the same properties."* However, Applicant contends that the claimed ranges recited in the present invention yield unexpected results otherwise not realized by those of ordinary skill in the art.

The upper limit of boron (B) concentration recited in the claims is less than the boron concentration of the examples disclosed in Uchida. As described in Applicants originally filed specification, the range of boron concentration in the R-T-B base sintered magnet is particularly relevant to the disclosed invention. For example, as the B concentration is

lowered, a soft magnetic R_2Fe_{17} phase would be easily formed in the grain boundary phase, and therefore, the coercivity would decrease significantly. FIG.1, of the present application, shows that the intrinsic coercivity H_{cJ} of the sample including 0.96 % boron and 0.02 mass % of Ga, which was heated at 773 K, is drastically increased as compared with that of the sample as-sintered. In addition, FIG.1 shows that the intrinsic coercivity H_{cJ} of the sample including 0.96 % boron and no Ga is much less than that of the sample including 0.96 % boron and 0.02 mass % Ga. The addition of a small amount of Ga can increase the intrinsic coercivity H_{cJ} of the R-T-B base sintered magnet that includes 0.96 96 boron or less.

Turning again to FIG.1, when the boron concentration exceeds 0.96 %, a difference in the intrinsic coercivity H_{cJ} between the sample including Ga and the sample including no Ga is very small. In contrast, a difference in the intrinsic coercivity H_{cJ} between the sample including Ga and the sample including no Ga becomes large when the boron concentration is less than 0.96 %. In view of the effects of the addition of Ga, Applicant has determined that a critical point exists between 0.96 % and 0.97 % in boron concentrations of the R-T-B base sintered magnet.

The above effects of the addition of Ga into the R-T-B base sintered magnet in which the boron concentration is less than 0.96 % is **not** (emphasis added) obvious from the cited prior art, and the effects constitute, *inter alia*, otherwise unexpected results which is fully supported by the disclosure of the present application.

With respect to claim 5, the claim recites a step of subjecting the sintered magnet to a heat treatment at a temperature of 400 °C to 600°C. As described above, with reference to FIG.1, the heat treatment drastically increases the intrinsic coercivity H_{cJ} of the sample including 0.96 % boron and 0.02 mass % Ga. This feature, in combination with the additionally claimed features, is not rendered obvious by the cited prior art.

According to the present invention, even though the B concentration is reduced, a high-coercivity sintered magnet, including substantially one having no B-rich phases ($R_{1.1}Fe_4B_4$), can still be provided with the production of minimizing a soft magnetic phase. Without the teaching as provided by present invention, the B concentration would be set to more than 0.96 mass %. Uchida readily fails to teach or suggest that the B concentration can be less than 0.97 mass % and is counterintuitive to the invention as claimed. Thus, a person of ordinary skill in the art would think that the coercivity would decrease if the B concentration were set less than 0.97 mass %. Hence, motivation or suggestion to arrive at the claimed invention is not otherwise possible.

In accordance with the M.P.E.P. § 2143.03, to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 196 (CCPA 1970). Therefore, it is respectfully submitted that Uchida, taken alone or in any proper combination, fails to disclose or suggest the subject matter as recited in claims 1 and 5. Hence, withdrawal of the rejection is respectfully requested.

Each of the dependent claims depend from one of independent claims 1 or 5 and are patentable over the cited prior art for at least the same reasons as set forth above with respect to claims 1 and 5.

In addition, each of the dependent claims also recites combinations that are separately patentable.

In view of the foregoing remarks, this claimed invention, as amended, is not rendered obvious in view of the prior art references cited against this application. Applicant therefore

requests the entry of this response, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

In discussing the specification, claims, and drawings in this response, it is to be understood that Applicant in no way intends to limit the scope of the claims to any exemplary embodiments described in the specification and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Should the Examiner believe that a telephone conference would expedite issuance of the application, the Examiner is respectfully invited to telephone the undersigned patent agent at (202) 585-8316.

Respectfully submitted,

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